IMPAIRED DRIVING PROGRAM

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• Ignition Interlock Program

Alberta

SOLICITOR GENERAL

IGNITION INTERLOCK PROGRAM

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I INTRODUCTION

The Department of the Solicitor General of Alberta is examining new and innovative approaches to the problem of impaired driving. Included in this is the introduction of an ignition interlock program.

The Ignition Interlock Program is one which would prevent a previously convicted impaired driver from driving his/her vehicle when his/her blood alcohol concentration is above a prescribed level.

Basically, the ignition interlock device consists of a hand-held breath alcohol analyzer and a microcomputer connected to the vehicle's electrical system. In order to start the car, the driver must first blow into the analyzer which measures the blood alcohol concentration (BAC). If the driver's BAC exceeds the BAC setting on the device, the vehicle will not start. For more than a decade there have been devices of this nature developed which would prevent an alcohol-impaired person from driving. If the driver exceeds the BAC while the vehicle is in operation, the headlights, signal lights, four way flashers or horn will be activated to discourage the person from driving further and alert police and other motorists to the vehicle and its driver.

For the purposes of this paper, the devices will be referred to as ignition interlock device(s). They are often referred to as alcohol sensing devices or IVAT (In-Vehicle Alcohol Testing) devices by other jurisdictions, however, these devices will all be generically referred to as ignition interlock devices.

This briefing paper will outline the benefits of an ignition interlock program, comment on its present utilization in other jurisdictions and summarize the proposed program operation for Alberta.

II PROGRAM BENEFITS

How an interlock program is designed and monitored is dictated by the intended benefits expected from use of the device. Some even predict a market for the voluntary installation of ignition interlocks (leased vehicles, fleets, high risk drivers, insurance discounts) but an attempt by General Motors to market them as an optional device in New Zealand was not successful.

Benefits cited in literature reviewed, and discussion on the subject, indicate that mandated ignition interlock use could possibly:

- protect the public (a suspended licence doesn't prevent a person from driving);
- reduce likelihood of subsequent impaired driving violations;
- facilitate continued employment, education or treatment for an otherwise suspended driver;
- be instrumental in modifying impaired driving behavior of offenders;
- be used as a substitution for, or in addition to, penalties for impaired driving convictions; and,
- support and reinforce the benefits of existing alcohol education/rehabilitation programs.

III PRESENT UTILIZATION

At the present time there are no ignition interlock devices known to be mandated as a driver's licence condition in Canada. However, in the United States at least nine states have enacted legislation permitting the installation, servicing and monitoring of ignition interlock devices. Another 16 states have introduced legislation on the subject. In some states the courts require the use of ignition interlock devices even though there is no specific enabling legislation in force.

While the criteria for mandating ignition interlock devices varies, it is usually imposed by the court as a probation condition at the time of conviction for an impaired driving offence.

A summary of some of the programs now in effect in the United States is presented in the next section of this briefing paper. Programs are currently under way in California, Oregon, Maryland, Ohio and Denver.

As is the case in Alberta, other jurisdictions, including Germany and Australia, are evaluating prospects for the development of a program which uses ignition interlock devices to deter and control impaired driving.

IV SUMMARY OF U.S. PROGRAMS

A. CALIFORNIA

1. Legislation

California enacted legislation to allow for the use of ignition interlock devices in January of 1987. The State Legislature at that time sanctioned a two year pilot study for four counties, and the Office of Traffic Safety was designated to implement the study (only three counties were selected). The legislation will remain in effect until January 1, 1990, unless extended by further legislation.

2. Authority

The judiciary in the three counties participating in the program have the task of selecting clients for same.

3. Target Population

California's criteria for eligibility is divided into three categories:

a) In the case of first offenders all persons who have a blood alcohol content above .25; all persons who are between the ages of 18 and 21; and all persons who report to an assigned driving class while under the influence of alcohol, or in an intoxicated condition.

b) All second time offenders, and

c) Third and subsequent offenders who retain a property interest in a motor vehicle.

4. Program Description

The Office of Traffic Safety selected the counties of Sonoma, Alameda and San Diego to participate in the pilot study. The courts in those counties "may require any person who is convicted of driving under the influence and placed on probation not to operate a motor vehicle while on probation unless the vehicle is equipped with a certified functioning ignition interlock device. An ignition interlock device is to be used in addition to other requirements of the law. It is not to be used as a substitute for participation in an alcohol education or rehabilitation program."

The court will advise the Department of Motor Vehicles of the requirement for an ignition interlock device and the period of time it is to be on the individual's automobile. The probationer will have 30 days to prove to their probation officer that he/she has complied with the court order. Persons with an ignition interlock device must report to a probation officer annually, or as often as the court deems necessary. Failure to comply will result in termination of the probation order.

If a probationer is required to operate a motor vehicle in his/her course of employment, and the vehicle is owned by the employer, "the probationer may operate that vehicle without an ignition interlock device, if the employer has been notified by the probationer that he/she has this restriction, and proof of notification is maintained in the vehicle, or on the probationer's person."

The manufacturer is responsible for providing the court with all necessary forms to facilitate the use of an ignition interlock device as a condition of probation. Procedurally, the court provides written documentation to the client and the Department of Motor Vehicles, who reinstate the probationer's driving privileges once the court specified ignition interlock device is installed. The manufacturer services the device at regular intervals, and advises the court of its findings.

The Department of Motor Vehicles' records reflects the mandatory use of an ignition interlock device. Probationers who drive a vehicle without an ignition interlock device have their licence revoked by the Department of Motor Vehicles, and the period of revocation is one year for a single offence.

5. Monitoring

The overall program is being monitored and will be evaluated by the Office of Traffic Safety, however, records of individuals placed on the program are maintained by the Department of Motor Vehicles. There is no indication on the operator licence that an ignition interlock device is required. The only way the police are made aware of this requirement is by checking a person's operator's licence against the Department of Motor Vehicles' records.

The ignition interlock device is serviced every 60 days, and if at the time of servicing it is discovered that the device has been tampered with, the manufacturer is to advise the probation authorities immediately.

6. Enforcement

If a probationer tampers with the ignition interlock device or drives a vehicle without it, he/she is charged and if convicted, sentenced to a maximum of six months in jail and/or fined up to $5,000. His/Her operator's licence is automatically suspended for an additional year. Further, Judge R. Maino of North County Municipal Court in San Diego County has set the following guidelines: should a probationer refuse to participate in the program, a first offender will receive ten days community service work; a second offender will be sentenced to 30 days in custody; and the third or subsequent offender will receive 60 days in custody in addition to any other penalty. These sentencing standards are being adopted by the two other pilot counties.

7. Product

California has certified three ignition interlock devices. They are:

a) The Alcolock from Autosense Corporation
b) The Guardian Interlock from Guardian Technologies Inc.
c) The Mark I from Safety Interlock Incorporated

The judge in the pilot county selects which model he/she wants to use, and fills out a form for that manufacturer, which the probationer takes to an installation location specified on the form. Each manufacturer is responsible for installation and service. To date, 150 units have been installed with respect to the pilot study. Servicing is completed by the manufacturer at various locations throughout the pilot counties. Two of the manufacturers have mobile service centres.

8. Cost

The user pays for the ignition interlock device. The initial cost is approximately $530 (U.S.) per year, which includes installation and service. If the person is determined by the court to be indigent, there are provisions in California's legislation to allow them access to an ignition interlock device. Two manufacturers have established payment plans.

9. Other

The main concern with the California program is the fact that the whole project is dependent on the cooperation of the judiciary. If they don't agree with the concept, they will either not participate in the program, or set their own standards. Further, over 200 ignition interlock devices have been placed in cars by judges from counties not involved in the study, which creates a problem for the researchers as these courts were initially designated as the control group.

California had planned to conduct an evaluation of their program in July 1988, however, an interim report recommended the pilot program and evaluation be deferred for one year.

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B. OREGON

1. Legislation

The State of Oregon passed legislation on June 24, 1987, allowing the use of ignition interlock devices, and establishing standards and sanctions for failure to comply with the regulation. The legislation designated the Traffic Safety Commission as the organization responsible for establishing a pilot program. The Motor Vehicles Division, according to legislation, "must adopt rules that specify requirements for ignition interlock devices which may be used and shall publish a list of devices that meet the requirements."

2. Authority

In the 11 counties specified, the courts are responsible for placing individuals on the program. The legislation states that the court shall, in addition to any other sentence imposed, require "an approved ignition interlock device be installed in any vehicle owned or operated by the person before the person is eligible for a hardship driver's permit".

3. Target Population

In the 11 counties participating in the pilot study, any person wanting to obtain a hardship licence must have an ignition interlock device installed in his/her vehicle.

4. Program Description

When a person is convicted of impaired driving, the judge completes a Notice of Suspension or Revocation. The notice states "the person must have an approved ignition interlock device installed as a requirement for a hardship licence". The device must be installed before the Department of Motor Vehicles issues the hardship licence. A hardship licence is issued for the period of suspension/revocation for work purposes, attendance at alcohol treatment programs and/or to obtain medical treatment.

The ignition interlock device is installed and serviced by the manufacturer, who reports findings to the Department of Motor Vehicles.

5. Monitoring

A hardship licence issued to an individual clearly indicates that the holder of the licence can only operate a vehicle which has an ignition interlock device. The licence also indicates all other driving restrictions. The Department of Motor Vehicles records the special restriction(s) on their computer system.
The installed ignition interlock device is serviced every 60 days by the manufacturer, who reports his/her findings to the Department of Motor Vehicles.

6. Enforcement

When a person tampers with the ignition interlock device or drives a vehicle which he/she is not sanctioned to drive, the Department of Motor Vehicles immediately revokes the licence. In addition to revocation, an individual may be charged with a class A traffic infraction, which could result in a fine of up to $1,000. The decision to proceed with charges is left to the discretion of the Department of Motor Vehicles.

7. Product

Oregon has certified one ignition interlock device, namely Guardian Ignition Interlock. The manufacturer installs and services the devices at a location central to the 11 counties involved in the pilot study.

8. Cost

The initial cost for the ignition interlock device in Oregon is $200 (U.S.) which includes installation and the first two months of service. There is an additional $40 service fee for each month thereafter (i.e. $600 for 1st year, $480 each year thereafter). A payment plan can be arranged with the manufacturer. Those who are indigent will be provided with a device and the cost will be absorbed by the Intoxicated Driver Fund.

9. Other

A report was prepared in February 1989, comparing offenders on the program, in the 11 pilot counties, to a control group of offenders issued a hardship licence without an ignition interlock device in other Oregon counties. The study noted "not enough information is available to draw conclusions about the traffic safety benefits of the ignition interlock pilot program. Also, because hardship permit issuance rates are lower in the pilot counties, and because characteristics of hardship licensees in the pilot counties are different, direct comparisons between the groups are biased. Consequently, even with more information, only carefully qualified, conditional conclusions could be drawn".

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C. MARYLAND

1. Legislation

Maryland has not drafted legislation. The judge who implemented the program in Maryland is of the opinion there is no need for changes to legislation in order to place such an ignition interlock device on a person's automobile, citing the Attorney General of Maryland, who issued an advisory opinion stating "the requirement for installation of an ignition interlock device as a condition of probation is constitutionally permissible".

2. Authority

Maryland District Court Judges.

3. Target Population

First offenders with a blood alcohol reading of .15 or higher, as well as any repeat offender.

4. Program Description

This program was initiated by Judge Larry D. Lamson in June 1986. His objective was to reduce the recidivism rate in Maryland and thereby assist in the rehabilitation of these offenders. The candidates are selected from the target population on a random basis, and participation is mandatory. Those not chosen for the program but fitting the criteria are the control group. The decision to use repeat offenders, as well as first time offenders with blood alcohol sample above .15, was based on Judge Lamson's hypothesis that, in either case, the offenders were problem drinkers who needed external controls.

The ignition interlock device is made a condition of probation and the probationer has 30 days to have it installed. The period of time the device must be installed in the probationer's automobile varies from case to case, but on average is for one year. The probation condition to have such a device is made in conjunction with other probation requirements such as a fine, community service work and alcohol treatment. Failure to comply results in a breach of probation. The device is installed and serviced by the manufacturer.

5. Monitoring

Monitoring is via the supervision of the probation order by a probation officer and the manufacturer's servicing of the product. The ignition interlock device is serviced every 60 days.

6. Enforcement

If a device has been tampered with or a probationer is driving without an ignition interlock device he/she will be charged with a breach of probation.

7. Product

The courts in Maryland are using only one product, namely, the Guardian Ignition Interlock. Judge Lamson attributed the Maryland District Court's choice of the Guardian Ignition Interlock solely to the availability of their product.

8. Cost

The dollar value was not indicated by Judge Lamson, however, the equipment is installed on a user pay basis. Payment plans can be arranged with the manufacturer.

9. Other

The University of Maryland was to conduct an evaluation of the ignition interlock device and program by September of 1988. The Safety Education Centre is currently working on but has not yet produced a report. Monitoring of the ignition interlock device is difficult at present and according to Judge Lamson, they are looking at legislation which will permit an endorsement on the user's operator's licence. The endorsement would alert the authorities to the fact a probationer requires an ignition interlock device in order to operate a motor vehicle.

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D. OHIO

1. Legislation

Legislation was drafted and introduced in 1987, however, it has not been passed as yet.

2. Authority

Judges of Hamilton County Municipal Court, Cincinnati, Ohio.

3. Target Population

First offenders with blood alcohol concentration (B.A.C.) of .20 or more; repeat offenders convicted of impaired driving more than once within ten years; and offenders who have refused breathalyzer analysis at the time of arrest.

4. Program Description

Judges of Hamilton County Municipal Court in Cincinnati, Ohio, have selected certain convicted offenders to participate in a two year study. The study is to determine "the effectiveness of ignition interlock devices in deterring repeat drunken driver offences, and in changing a person's drink/drive behavior for the better, and if use of the device is more effective than licence suspension or revocation in reducing recidivism." For a minimum of one year the ignition interlock device will remain in a person's vehicle as a condition of probation.

The offender is issued a letter by the court, in lieu of an operator licence, which specifies the need to have an ignition interlock device in his/her automobile.

The Bureau of Motor Vehicles is advised by the court of this requirement and they record the information on their computers.

5. Monitoring

The manufacturer is responsible for the installation and servicing of the ignition interlock device.

6. Enforcement

If the person fails to comply, he/she is charged with driving while under suspension.

7. Product

Guardian Ignition Interlock.

8. Cost

The user pays for the implementation and servicing of the device.

9. Other

The University of Colorado, Institute of Behavioral Science, was commissioned by The Committee on Alcohol and Other Drugs, The National Safety Council, to conduct a study, which was completed in October 1988. The evaluation looked at equipment failure (91% indicated problems), attempts to circumvent the device (14% reported one or more attempts), and the user's perceived effectiveness of the ignition interlock device. The researchers commented that

the data reported involved a relatively small sample (66 participants, were interviewed) and a short installation/evaluation period (12 months). Further evaluations providing a greater population and covering a longer period of time will be necessary to establish the effects of the program, particularly respecting recidivism.

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E. TEXAS

1. Legislation

The state of Texas has passed legislation allowing for the use of ignition interlock devices but details of their program implementation are not available at this time.

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F. MICHIGAN

1. Legislation

Michigan has passed legislation which permits ignition interlock devices to be used in their state.

2. Other

No information on their plan of action is yet available.

G. WASHINGTON

1. Legislation

The State of Washington passed legislation on May 5, 1987, which authorized the use of ignition interlock devices.

2. Other

To date, the product evaluation has not been completed. Washington is awaiting the results of the California study before proceeding with an ignition interlock program.

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V STANDARDS

There is currently no national or international standard for the ignition interlock devices. The State of California has drafted program guidelines and test procedures, and Washington and Michigan have legislated standards.

Transport Canada, Road Safety and the Motor Vehicle Regulation Directorate, have been closely observing the activities of the U.S. National Highway Traffic Safety Administration in the area of ignition interlock development. Several members of the American Association of Motor Vehicle Administrators as well as existing and potential manufacturers would like to see a common North American standard.

Alberta has researched existing product features and developed a specification to which ignition interlock devices must conform in order to operate in the province. The Department of the Solicitor General has worked in a cooperative effort with product manufacturers, the RCMP, and the Electronics Test Centre of the Alberta Research Council in the development of a comprehensive product testing procedure. All proposed devices must pass this test plan, prior to approval for use in the program. The testing which takes in excess of two weeks, combines established breath alcohol testing procedures and automotive industry test standards.

VI ALBERTA'S PROPOSED IGNITION INTERLOCK PROGRAM

The Department of the Solicitor General has been working on program objectives, legislation, eligibility criteria, ignition interlock device features, device testing specifications, and service delivery considerations. The following sections provide detailed information on these strategies. In addition to a departmental committee, extensive consultations have been undertaken with potential manufacturers, and particularly the RCMP Crime Laboratory in Edmonton, with respect to breath alcohol testing.

A. OBJECTIVES

1. To protect other road users from previously convicted impaired drivers.
2. To allow a legal driving opportunity for previously convicted impaired drivers who might otherwise continue to be suspended indefinitely by the Driver Control Board, after the statutory suspension period has been satisfied.
3. To allow suspended impaired drivers the legal opportunity to drive after the period of legal court ordered prohibition has been satisfied, but prior to full completion of the provincial suspension period given under the Motor Vehicle Administration Act.
4. To reinforce the message that drinking and driving do not mix.

B. ENABLING LEGISLATION

In Alberta, drivers are governed by the requirements of the Motor Vehicle Administration Act. Amendments to the Act were proclaimed October 1, 1988. These substantially increased the suspension periods for persons convicted of impaired driving offences and included provisions for the use of alcohol sensing devices (ignition interlocks).

Specifically, Section 19.1 of the Motor Vehicle Administration Act allows the Driver Control Board, on the application of the person, to allow that person to hold a driver licence and to operate a vehicle equipped with an ignition interlock device. In all cases, the court imposed suspension period must have expired, however, the provincial suspension under the Act could be set aside. The Driver Control Board may also impose the use of an ignition interlock on the vehicle of a previously convicted impaired driver, as a condition of licence reinstatement, after both the court imposed suspension and the provincial suspension under the Motor Vehicle Administration Act have expired.

C. ELIGIBILITY CRITERIA

1. A driver must meet the following eligibility criteria to be considered for Alberta's Ignition Interlock Program:

   a) The current suspension must be alcohol related.
   b) The driver must apply to have an ignition interlock device installed and agree to pay all associated costs.
   c) The court-imposed prohibition must have expired.
   d) The suspension must arise from the decision of an Alberta court.
   e) Probationary drivers are ineligible.
   f) First time offenders are ineligible.
   g) For the convicted impaired driver whose latest offence occurred prior to October 1, 1988:
      i) A second time offender is eligible one year after conviction date if the court-imposed prohibition has expired;
      ii) A third time offender (and subsequent) is eligible two years after conviction date if the court-imposed prohibition has expired.
   h) For the convicted impaired driver whose latest offence occurred on or after October 1, 1988:
      i) A second time offender is eligible two years after conviction date if the court-imposed prohibition has expired;
      ii) A third time offender (and subsequent) is eligible three years after conviction date if the court-imposed prohibition has expired.
   i) An eligible driver who applies and is approved for an ignition interlock device must satisfy all reinstatement conditions, except the provincial suspension period, if applicable, before a licence is issued.

   In addition to the aforementioned eligibility criteria for early conditional reinstatement of an operator's licence, the Driver Control Board may request a selected driver, who has satisfied both the federal (prohibition period) and provincial suspensions, to install an ignition interlock device if he/she is identified as a high-risk candidate for re-offending. A high-risk candidate may be a driver who:

   a) Has a record which includes three or more alcohol related convictions.
   b) Has recorded an exceptionally high BAC reading(s) on the current or a previous charge (if applicable).
   c) Has been responsible for an accident causing serious bodily injury or death while impaired (if applicable).
   d) Has not addressed his/her alcohol problem; or
   e) Has a significantly poor attitude toward impaired driving.

D. IGNITION INTERLOCK DEVICE SPECIFICATIONS

1. Breath Alcohol Sensitivity

a) The device must be capable of analyzing a specimen of deep lung breath specifically for alcohol.
b) The device shall indicate when a suitable sample has been taken.
c) The device must not give readings for any products not containing alcohol.

2. Accuracy

a) The device must indicate WARN at 20 mg% and FAIL at 40 mg% and enter appropriate functional stages as noted below.
b) When results of 30 consecutive analyses of vapors of a known alcohol concentration in the range corresponding to BAC's from 30 to 50 mg% are analyzed the standard deviation shall not be greater than 3 mg% and the mean shall be within +/- 5mg% of the true value.

3. Temperature/Humidity

a) The device must operate between -40 degrees Celsius and +70 degrees Celsius.
b) Readings must be unaffected by humidity or barometric conditions.

4. Test Features

a) The device must be set to register a WARN at 20 mg% and FAIL at 40 mg%.
b) After the successful completion of a breath alcohol test (other than for a BAC of 40 mg% or greater) the ignition relay will be enabled. After starting the motor vehicle, there must be an automatic initial retest at eight minutes with a warning period commencing at the six minute interval (two minute warning period). Retests may be conducted while driving the motor vehicle unless a BAC of 40 mg% or greater results.
c) Failure to take a retest will result in the device going into a time lapse "fail" mode (horn and flashers) which can be corrected by performing the retest and obtaining a BAC of less than 40 mg%.
d) If the result of the initial test is 40 mg% or greater, the ignition relay will remain disabled and the vehicle is "interlocked". An initial retest will be permitted in five minutes with subsequent retests allowed every 30 minutes thereafter until the breath test yields a BAC less than 40 mg%.
e) If the result of the retest is less than 20 mg%, subsequent retests will be required every 30 minutes with a warning period commencing at the 28 minute interval (two minute warning period).
f) If the result of the retest is 20 mg% or greater but less than 40 mg%, subsequent retests will be required every eight minutes with a warning period commencing at the six minute interval (two minute warning period).

g) If the result of the retest is 40 mg% or greater the device will enter a "fail" mode with a two minute grace period for the driver to pull over before any failure actions are activated.
h) The device must provide a "restart" grace period of three minutes after the ignition is turned off except where the "fail" mode has been activated on retest.

5. Security Features

a) Ignition interlock occurs automatically at a reading of 40 mg% if the car engine is not running.
b) The use of a "breath code" is optional on the initial start of the car, however, is not to be used for any retests while the car is operating.
c) The device must be capable of thwarting attempts at bypass or circumvention with the use of bogus or filtered breath samples.
d) If a reading of 40 mg% is obtained while the car engine is not running, there will be one retest allowed after five minutes. If a reading above 40 mg% is still obtained, retests can occur every 30 minutes thereafter until a reading under 40 mg% is obtained.
e) If a reading of 40 mg% is obtained during a retest the device will go into the FAIL mode and the driver will be given a two minute grace period to pull over and shut off the car engine. If this does not occur the following will occur after the two minute grace period:
   i) horn will sound; and
   ii) four-way flashers will flash.
f) Any attempts to start the vehicle without taking a breath test, including use of an alternate power source, must be able to be detected and recorded. Attempts to bypass the device or disconnect it from the battery shall be recorded.
g) The device shall be installed with tamper resistant wiring. At mandatory inspection appointments any alterations to the wiring of the automobile which could change the function of the device will be reported.

6. Monitoring

a) A record of all tests where alcohol is detected at a 20 mg% BAC reading and above must be recorded by the device (day/date/time).
b) A record of all starts where no alcohol is detected is optional (a simple list of the number of these starts by day would be the most that needs to be provided).
c) A record of each time (and the period of minutes) that a time lapse FAIL occurred or a BAC FAIL did not result in the vehicle being stopped within the grace period is required.
d) A hard copy printout of the activities of the device must be provided by the contractor at up to a maximum of 60 day intervals. The unit must:
   i) have a minimum memory capacity of 600 events (e.g. an average of ten events for 60 days); and

ii) signal mandatory servicing once the datalogger reaches 90% capacity, if at any point the capacity is insufficient for 60 days operation and monitoring.
iii) Failure to have the device serviced shall cause the FAIL mode to engage.

e) At the 60 day inspection the integrity of the device shall be checked including wiring, performance of datalogger and the BAC calibration.
f) The device must provide a notice to the user(s) that a servicing is scheduled three days in advance of scheduled servicing.
g) Once seven days have lapsed beyond a servicing requirement, the device shall remain on interlock until serviced.
h) The device must be able to record tampering. If the device is disconnected or otherwise tampered with, there is no requirement for it to continue monitoring until it is reactivated.
i) The device must be able to record day, date, time, BAC level and test result.

7. Unit Features

a) The device must be mounted under the dash.
b) The device should have a removable sample chamber.
c) The device must be able to accept a breath sample within one minute, however, within 30 seconds would be preferred.
d) The device should provide cues to the driver through audible sounds or digital readouts when to provide a sample, when to start the car, etc.
e) The device should be able to provide a three digit readout or bargraph, (in modules of 10 mg%), of the alcohol breath sample (which is recorded in the memory).
f) Digital readout or bargraph should be of sufficient size to allow for easy readability.
g) The device should be encased in high impact plastic or similar product to reduce vandalism potential and to ensure that the device's components are protected.
h) The device memory must be non-volatile, so that loss of power or tampering with the device does not result in loss of memory.
i) The device/microprocessor must:
   i) be shielded from electromagnetic interference, and
   ii) not promote electromagnetic interference to other functions (i.e. interfere with Electronic Fuel Ignition).

E. DEVICE TESTING

1. A contract was established by the Department of the Solicitor General with the Electronic Test Centre of the Alberta Research Council for the development of product test procedures for ignition interlock devices. Two potential suppliers and a RCMP breath analysis specialist contributed actively to the development of the test.

2. A detailed test procedures document titled "Qualification Test Specifications for Breath Alcohol Ignition Interlock Devices" was approved in January 1989. All devices proposed for use in this program must submit and pass this rigorous, scientific, product testing procedure. The full schedule of tests requires 12 to 14 days, and the associated test expense of approximately $16,000 is underwritten by the product manufacturer.

3. Testing includes:

   a) Ambient Conditions: This procedure contains 30 separate and distinct steps to ensure the device is functioning according to device specifications.
   b) Temperature Cycling: The device is subjected to four hour cycles of temperatures from -40 degrees Celcius to +80 degrees Celcius. A total of 12, four hour cycles are performed to measure temperature tolerance.
   c) Vibration Testing: The device is subjected to eight hours continuous vibration, according to a Ford Motor Company specification, to measure durability.
   d) Ambient Conditions: After temperature and vibration testing, the device is subjected to performance testing as in step 1), to ensure that it continues to meet functional specifications.
   e) Breath Alcohol Concentration Accuracy: A series of tests are performed to measure the degree of accuracy against evidentiary breath alcohol instruments. A range of pre-measured solutions of alcohol, in simulators, provide breath samples to interlock and evidentiary devices, multiple times, at temperatures of 0 degrees Celcius, -20 degrees Celcius, -40 degrees Celcius, +20 degrees Celcius, +40 degrees Celcius, +70 degrees Celcius and at +40 degrees Celcius at 95% relative humidity.
   f) Alcohol Sensitivity: A series of experimental tests are performed to measure whether substances other than alcohol result in positive readings (e.g. cigarette smoke, cough drops, mints, toothpaste, garlic, onion).
   g) Tampering and Circumvention: A series of experimental tests are performed to identify the ability of the device to thwart and detect tampering and circumvention attempts.
   h) Power Voltage Operating Range: The power voltage range test is performed to identify the ability of the device to function over the normal operating voltage range of the vehicle's DC power system.
   i) Conducted Emissions: The conducted emission test is performed to identify the level of interfering noise conducted out of the test sample. Maintenance of conducted emissions at a low level is essential in preventing the degradation of the performance of the automobile's other electronic systems.
   j) Radiated Emissions: As above, to measure the level of electric field emissions radiated from the device.
   k) Conducted Susceptibility: This test is performed to identify the ability of the device to function in the presence of audio frequency noise on its DC power leads.
   l) Spoke Conducted Susceptibility: This test is performed to measure the ability of the device to function in the presence of high voltage spikes, normally caused by switching vehicle lights or fans on and off.

F. SERVICE DELIVERY STANDARDS

1. Service Centres

a) During an initial program implementation phase-in period, the installation, servicing and removal of ignition interlock devices shall be offered in Edmonton and Calgary.
b) The fully operational delivery model will expand to include all locations where the Driver Control Board conducts hearings, which will add the following service points: Red Deer, Lethbridge, Medicine Hat, Grande Prairie and Fort McMurray.

2. Installation

a) The appropriate instruction forms for participation in the Ignition Interlock Program will be developed by the service provider and given to the Driver Control Board for distribution where applicable.
b) The device must be installed by a manufacturer or his/her representative, and only a device model which has passed the Alberta Research Council test plan shall be installed.
c) An orientation to the ignition interlock device will be developed and delivered by the service provider to the participating impaired driver and any family members who may drive the vehicle, including information on all servicing locations, procedures for regular servicing and emergency situations.
d) A lessee or other unauthorized persons shall not be permitted to observe installation of the device.
e) Adequate security measures must be taken to prevent unauthorized persons from accessing materials (tamper seals, installation instructions, etc).
f) Each manufacturer shall develop written instructions for installation of his/her ignition interlock device(s).
g) The installer must screen vehicles for acceptable mechanical and electrical condition, in accordance with the device manufacturer's instructions.
h) Conditions that would interfere with the function of the device, (e.g. low battery or alternator voltage, stalling frequent enough to require additional breath tests, etc) must be corrected by the participant to a level acceptable to the installer.
i) Installations must be made in a workmanlike manner, with accordance to accepted trade standards, and according to the instructions provided by the manufacturer.
j) Whenever a device is removed, the vehicle must be reasonably restored to its original condition. All severed wires must be permanently reconnected and insulated with heat shrink tubing or its equivalent.
k) Personnel who install, calibrate, perform tamper inspections and perform reporting duties shall be subject to having a criminal record check performed by the Department of the Solicitor General.

l) Upon installation the manufacturer or his/her representatives shall complete a notice of proof of installation including:
   i) The name, address and telephone number of the lessee, or purchaser;
   ii) The owner, make, model, V.I.N., color, year and licence plate number of vehicle;
   iii) The serial number of the installed ignition interlock device; and
   iv) The length of the installation, as directed by the Driver Control Board, monitoring checks and payment schedule.

m) The above notice shall serve as a contract between the lessee and lessor, be signed by the lessee and authorized by the installer, with copies provided to the lessee, the Department of the Solicitor General, and the installer.

3. Servicing

a) The service provider will have a 24 hour toll free number in the event of emergencies with the ignition interlock device.

b) All emergencies with the ignition interlock device will be repaired or replaced by the service provider within 24 hours. Under no circumstances shall a participant's vehicle be permitted to be driven without an approved device.

c) A service provider will be available at the service center during specified hours, to answer questions and to deal with any mechanical concerns that may arise with a vehicle as a result of the ignition interlock device. He/She will also be available to repair or replace the ignition interlock device in the event the device malfunctions, is tampered with or is otherwise rendered inoperable.

d) Servicing of installed devices shall be performed a minimum of every 60 days and reports provided to the Department of the Solicitor General. In addition, a physical inspection shall be performed to determine whether any connections have been tampered with. In the event tampering is detected , this information shall be provided to the Department of the Solicitor General immediately.

e) An additional report shall be provided to the Solicitor General on a quarterly basis summarizing all problems related to monitoring/servicing checks and all complaints received by the manufacturer. These reports shall be categorized by:
   i) Customer error of operation;
   ii) Faulty automotive equipment other than the ignition interlock device;
   iii) Apparent misuse or attempts to circumvent the device, causing damage; and
   iv) Device failure due to material defect, design defect and workmanship errors in construction, installation or calibration.

4. Cost

a) The program operates on a user fee basis with all associated costs assumed by the participant.

b) The manufacturer shall offer equipment purchase and lease options to the participant.

c) The costs for installation, servicing and removal shall be established with the Alberta Government and not altered without an official review.
d) The established costs shall be based on common costs for service requirements, equipment and administration and shall not vary according to the vehicle serviced.
e) The established costs shall be uniform for all service centers.
f) The lessee/purchaser shall assume costs related to transferring a device where he/she initiates the request to install the ignition interlock device in a different vehicle.

5. Liability

a) The manufacturer/supplier/installer shall indemnify and hold harmless the Solicitor General his employees and agents from any and all claims, demands, actions and costs whatsoever that may arise, directly or indirectly out of any act or omission by the manufacturer, his/her employees or agents in the performance of the Agreement.
b) The manufacturer/supplier/installer shall maintain Comprehensive General Liability Insurance in the amount of not less than $1,000,000.00 per occurrence with $5,000,000.00 aggregate total. The liability shall cover defects in product design and materials, workmanship during manufacturing, calibration, installation and removal.
c) All insurance policies shall be through an insurer licensed in Alberta and shall be endorsed to provide the Department of the Solicitor General with 30 days prior written notice of cancellation, material change, or intent to lapse.
d) As evidence of all required insurance, certificates of insurance shall be provided to the Solicitor General prior to the commencement of work under this Agreement, and certified true copies of the policies shall be provided as soon as possible thereafter.
e) The manufacturer may claim, from lessees, associated costs for stolen or damaged ignition interlock devices.

6. Other

There are a number of other contracting issues currently being reviewed with other Alberta Provincial Government Departments, given the unique circumstances of this user pay government program:

a) Tendering, submission to test plan;
b) Evaluating compliance with service delivery standards in awarding a contract;
c) Terms of contract(s) with attention to consequences for failing to perform, termination, allowing for entry of competitors, etc.

VII CONCLUSION

This is a new concept incorporating new technology, and in order to implement even a pilot program, considerable planning is required. The Department of the Solicitor General has worked collaboratively with potential ignition interlock product suppliers, the Alberta Research Council and the RCMP in establishing the Alberta program model.

Evaluations of other programs have identified weaknesses respecting product performance and provided valuable information to improve security and the integrity of the program. The Alberta product specifications from this information, and issues respecting product reliability prompted the development of a comprehensive product testing procedure.

APPENDIX A: ALBERTA'S IMPAIRED DRIVING PENALTIES

Impaired driving is a criminal offence, tried pursuant to the Criminal Code of Canada, Sections 237, 238 and 239. Upon conviction under one of these sections the court will impose a driving prohibition in conjunction with any other disposition. The prohibition varies in length from three months to three years in most cases, however, it can extend to a lifetime prohibition in cases where impaired driving has caused a death. In addition to any court prohibition, the Registrar of Motor Vehicles, under the authority of the Motor Vehicle Administration Act, will suspend an operator's driving privileges for a period of 12 months on first conviction, three years on second conviction and five years for a third or subsequent offence within five years. These suspension periods were enacted on October 1, 1988, and apply to offences committed after this date. Offences committed prior to October 1, 1988, are subject to the previous suspension penalties of six months, 12 months and three years, respectively.

A court prohibition and a Motor Vehicle Administration Act suspension are not necessarily of equal length for the same offence. Both the court imposed prohibition and the Motor Vehicle Administation Act suspension will run concurrently to their respective conclusion, and whichever sanction is greater in length will take precedence with respect to the date the offender becomes eligible for licence reinstatement.

A. FIRST CONVICTION

A driver convicted of a first alcohol-related offence under the Criminal Code of Canada will be subject to a fine of not less than $300, and a prohibition from driving for a period of not more than three years, and not less than three months. In addition to the court prohibition the offender will receive a 12 month suspension from driving under the Motor Vehicle Administration Act. Additionally, the offender must successfully complete the one-day Alberta Impaired Drivers' Course, "Planning Ahead", offered by the Alberta Alcohol and Drug Abuse Commission. This is essentially a one day classroom session, providing information on the effects of alcohol on driving. Those offenders who are probationary drivers must also attend an interview with a driver examiner.

B. SECOND CONVICTION (Within five years of the first conviction)

A driver convicted of a second alcohol-related offence under the Criminal Code of Canada will be subject to imprisonment for not less than 14 days, and a prohibition from driving for a period of not more than three years and not less than six months. In addition to the court's period of prohibition the offender will receive a three year suspension from driving in Alberta under the Motor Vehicle Administration Act.

The offender must attend a 30 hour assessment of his/her use/abuse of and attitude to alcohol, prior to licence reinstatement. This is an intensive weekend small group dynamics counselling session program called "IMPACT", also offered by the Alberta Alcohol and Drug Abuse Commission.

C. THIRD OR SUBSEQUENT CONVICTION (Within five years of the first conviction)

A driver convicted of a third or subsequent alcohol-related offence under the Criminal Code of Canada will be subject to imprisonment for not less than 90 days, and a prohibition from driving for a period of not more than three years, and not less than one year. The offender will receive a five year suspension from driving in Alberta under the authority of the Motor Vehicle Administration Act.

These offenders must appear at a hearing conducted by the Driver Control Board to determine if they must complete any additional requirements imposed by the Board before their licence is reinstated after the statutory suspension has expired. The total driving record and any treatments taken are reviewed at this hearing. A driver may be suspended by the Board for an indefinite period of time. Such suspensions may be appealed to the Court of Queen's Bench. (Motor Vehicle Administration Act, Sections 21 & 23).

There are cases when alcohol/driving offenders other than those who have three such convictions are referred to the Driver Control Board. An alcohol suspension in addition to two other suspensions in a short period of time may result in the driver being referred to the Board by the Registrar. A single serious incident might also prompt the Minister, a judge, or the Registrar to refer a driver to the Board, (Motor Vehicle Administration Act, Section 21). In some cases a person determined by the Medical Review Board to be alcoholic is referred to the Driver Control Board.

Not all clients referred to the Driver Control Board appear before the Board. Some disappear from the system. Their driving privilege remains indefinitely suspended until reinstated by the Driver Control Board.